

Notice of Allowability

Application No.

09/834,593

Examiner

Barry Choobin

Applicant(s)

RUBBERT ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/26/05.
2. ☒ The allowed claim(s) is/are 1-63,65-82 (1-81).
3. ☒ The drawings filed on 2/11/02 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 4/26/05; 9/22/04
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DANIEL MIRIAM
PRIMARY EXAMINER

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows: In Specification, page 2, line 4, after (MBHB 00-131) please add –Now US Patent 6359680--

In Specification, page 2, line 9 after (MBHB 00-1000) please add –Now US Patent 6744914—

In Specification, page 2, line 10 after (MBHB 00-1001) please add –Now US Patent 6771809—

In Specification, page 2, line 11 after (MBHB 00-1002) please add –Now US Patent 6738508—

In Specification, page 2, line 14 after (MBHB 00-1006) please add –Now US Patent 6744932—

In Specification, page 2, line 17 after (MBHB 00-1027) please add –Now US Patent 6851949—

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 4/26/05 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Arguments

3. Applicant's arguments, see REMARKS/ARGUMENTS, filed 4/26/2005, with respect to 59-63 have been fully considered and are persuasive. The rejection under 35 USC 102 of January 26/2005 has been withdrawn.

REASON FOR ALLOWANCE

4. Prior art fails to teach or fairly suggest a scanner system for capturing three-dimensional information of an object, comprising; a memory storing a three-axis (X, Y, and Z) coordinate system calibration relationship for said scanner, said calibration relationship identifying; pixel coordinates for said electronic imaging device for numerous portions of said pattern, said pixel coordinates associated with distance information from said projection system in a Z direction at least two different Z distances, and distance information in X and Y directions, for said numerous portions of said pattern, at said at least two different Z distances, and comparing data from the calibration relationship to derive the spatial information in 3-D, in combination with other elements of independent claims 1, 43, 54, 59.

As to independent claim 26, prior art fails to teach or fairly suggest a method of obtaining 3-D surface information of an object, comprising; processing a series of images to obtain a series of frames of said object, each frame comprising spatial

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coordinates of a portion of the surface of said object in 3-D and registering overlapping areas of said frames to each other to generate a three dimensional virtual model of said object, in combination with other element of independent claim 26.

As to independent claims 50, 65 and 66, the key distinction between the closest prior art and instant application is in the way a Z calibration surface receives a projected pattern relative to the scanner. The instant application in claims 50, 65 and 66 calls for two Z distances separated by a known amount as recited in said claims. Prior art fails to teach or fairly suggest a calibration apparatus for a scanner, comprising a carrier system holding a Z calibration surface and a X-Y calibration surface and moving the Z calibration surface and X-Y calibration surface relative to said scanner between two different distance from the scanner.

Accordingly claims 1-63, 65-82 are allowed (renumbered as claims 1-81).

CONTACT INFORMATION

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 571-272-7447. The examiner can normally be reached on M-F 7:30 AM to 18:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Barry Choobin
7/28/05


DANIEL MIRIAM
PRIMARY EXAMINER